



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,414	02/17/2004	Won-keun Yu	0100-P0017A	1308
66837	7590	05/03/2007		
HYUN JONG PARK 41 WHITE BIRCH ROAD REDDING, CT 06896-2209			EXAMINER NGUYEN, DONGHAI D	
			ART UNIT 3729	PAPER NUMBER
			MAIL DATE 05/03/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,414	YU ET AL.	
	Examiner	Art Unit	
	Donghai D. Nguyen	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-15 and 36-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-15 and 36-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 09, 2007 has been entered.

Drawings

2. The amended Figure 1 was received on January 09, 2007. The drawing is accepted by the Examiner.

Claim Objections

3. Claims 36-40 are objected to because of the following informalities: the status of claims 36-40 should be: --(previously presented)-- instead of "(new)". Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 7-15 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,212,751 to Hattori in view of US Patent 6,434,264 to Asar.

Regarding claims 1 and 38, Hattori discloses an apparatus for positioning back-up pins on a support plate for supporting a circuit board thereon, the apparatus comprising: a back-up pin plate (200, see Fig. 9) having a substantially planar upper surface for positioning back-up pins (201) thereon; a back-up pin stand (236) for placing back-up pins therein; a camera (56, see Fig. 3) for taking surface images of the circuit board (24, See Col. 12, line 63 to Col. 13, line 5) to be supported by a plurality of back-up pins; a control unit (160) having a display unit (186) connected (see Fig. 6) for displaying the surface images of the circuit board taken by the camera (56 see Fig. 13 shows the back surface of PCB 24) and the control unit including a user interface (170/172) for allowing a user to allocate a plurality of support locations (see Fig. 7 and Col. 10, lines 11-19) for supporting the circuit board (as shown in Fig. 1) with the back-up pins at locations not interfering with parts (32) disposed on the circuit board (24) while viewing the images of the circuit board displayed on the display unit (186, see Fig. 13) ; and a transfer member (30) coupling with the control unit (160, see Col. 14, line 65 to Col. 15, line 7) for transferring a plurality of back-up pins from the back-up pin stand to the allocated support locations on the back-up pin plate (See Fig. 9). Hattori is silent regarding the display a first image representative of a portion of the surface of the circuit board and a second image representative of substantially the entire surface of the circuit board at the same time. Asar teaches the display unit (240, see Fig. 9) that display the display a first image (bottom left) representative of a portion of the surface of the circuit board (52) and a second image (top right) representative of substantially the entire surface of the circuit board for allowing user/operator

Art Unit: 3729

rapidly inspect the surface of the circuit board (see Col. 6, lines 31-44). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hattori by utilizing the display unit and display technique as taught by Asar for allowing user rapidly inspect the surface of the circuit board.

Regarding claim 2, Hattori discloses at least a portion of the back-up pin plate includes a magnetically material, and each of the back-up pins includes a magnetic portion for attaching onto the back-up pin plate by a magnetic force between the back-up pin plate and the back-up pin (see Col. 14, lines 19-20).

Regarding claim 3, Hattori discloses the camera (56) is a line charge-coupled device camera (see Fig. 6).

Regarding claim 4, Hattori discloses the first image is a real-time image taken by the camera and the second image is an image composed of a plurality of the real-time images taken by the camera (See Col. 13, lines 19-40).

Regarding claims 7 and 10, Hattori discloses the control unit includes a user interface (170) and/or input device (172 See Fig. 6 and Col. 10, lines 11-19).

Regarding claims 8-9, 11-12 and 39-40, Hattori does not disclose a mouse as input device of the control unit for entry and the user interface comprises a selection menu. Asar teaching control unit is a mouse (98) and user interface comprises selection menu (see Fig. 9) for inputting and selecting the desired views and operations of the circuit board. Therefore, it would have been an obvious to one having ordinary skill in the art at the time the invention was made to

modify the invention of Hattori by utilize the mouse and selection menu as taught by Asar for inputting and selecting the desired views and operations of the circuit board.

Regarding claim 13, Hattori discloses the user interface comprises a PCB loading mode for loading a circuit board onto the apparatus (See Fig. 1 and Col. 10, lines 19-29).

Regarding claim 14, Hattori discloses the back-up pin stand (236) comprises a plurality of openings (238) for receiving lower portions of the back-up pins (see Fig. 9).

Regarding claim 15, Hattori discloses the camera is coupled with the transfer member for moving together along a Cartesian coordinate (See Fig. 3 and Col. 11, lines 31-34).

Regarding claims 36 and 37, Hattori/Asar do not disclose the plurality of back-up pins having a general cylindrical shape with upper portion of the back-up pins having different diameter include about 8 mm and about 2 mm. It would have been an obvious matter of design choice to one having ordinary skill in the art at the time the invention was made to choose a different size and shape for the upper portion of the back-up pin. Since Applicants have not disclose the specific diameter i.e., about 8 and 2 mm of the upper portion of the back-up pins, would solve the stated problem or for any particular purpose and it appears that the invention would perform equally well with the back-up pins as disclosed by Hattori.

Response to Arguments

6. Applicants' arguments filed on January 09, 2007 regarding claims 1-4, 7-15 and 36-40 have been fully considered but they are not persuasive.

a) Applicants argued that “Hattori’s control unit does not include a user interface for allowing a user to allocate a plurality of support locations for supporting the circuit board with the back-up pins” (see “Remarks” page 9, 4th paragraph). The Examiner disagrees because Hattori teaches the control unit (160) includes the a user interface (170/172) for inputting operating instructions (by operator see Col. 16, lines 63-67), such as data for allocating back-up pins onto the back-up pin plate (see Col. 10, lines 9-19 and Col. 10, lines 40-53) at locations not interfering with parts (32) disposed on the circuit board (24, see Fig. 13).

b) Applicants argued that “there is no suggestion in Hattori that the transfer member to be coupled with the control unit for transferring a plurality of back-up pins from the back-up pin stand to the allocated support locations on the back-up pin plate” (see “Remarks” bridged paragraph between page 9 and page 10). The Examiner disagrees because the Hattori reference discloses the transfer member (30) which is coupled with the control unit (160) for transferring a plurality of back-up pins (201) from the back-up pin stand (236) to the allocated support locations on the back-up pin plate (200, See Fig. 9 and Col. 14, line 65 to Col. 15, line 7).

c) In response to applicant's arguments against the references individually (see “Remarks” page 10, 2nd paragraph and page 11), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

d) Furthermore, the claimed invention is directed to an apparatus, a recitation of the intended use of the claimed invention (such as for displaying the surface images and allocating the back-up pins) must result in a structural difference between the claimed invention and the

Art Unit: 3729

prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim in this application, the applied prior art teaches every structural element as recited in the present invention's claims. Therefore, the prior art capable of perform the above function intended used. It has been held that a recitation with respect to the manner in which a claim apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structure limitations. *Ex parte Masham*, 2 USPQD2d 1647 (1987).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art reference cited for it's teaching of board supporting means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3729

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN

April 26, 2007



Examiner: Donghai D. Nguyen